L-385

Texas Guide for Controlling

Citrus Pests

Scale insects on citrus.

TEXAS AGRICULTURAL EXTENSION SERVICE

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Texas Guide for Controlling Citrus Pests*

MITES

CITRUS RUST MITE—These pests cause russetting of fruit which makes it unacceptable to shippers of fancy fruit. The mites are almost microscopic in size and the damage only is visible. Populations increase sharply during and immediately after seasonal rainy periods.

Control: Apply 50 to 80 pounds of dusting sulfur per acre. Applications usually are required in March, May, August and October. The October application for cleanup purposes is a good practice. Unfavorable weather conditions at the time and following applications may greatly affect the control of mites. Wettable sulfur and lime-sulfur sprays are sometimes used. Recent work indicates promise for zineb sprays at the rate of 1 pound of the 50 percent wettable powder per 100 gallons of water.

TEXAS CITRUS SPIDER MITES — The mites are small and their damage is confined to the leaves. Heavy infestations cause mottling of the leaves giving them a grayish appearance. They may cause some defoliation of trees.

Control: A spray containing 2 percent (of actual oil) emulsive or miscible oil will control this mite, as will 2 pounds of 15 percent wettable aramite per 100 gallons of water. Dusting sulfur is of some benefit. Oil spray should not be used after September because it will damage the fruit.

SCALE INSECTS

CALIFORNIA RED SCALE — This scale is circular and reddish and attacks fruit as well as stems and twigs. Natural enemies nearly always keep scale under control on large trees, but young trees under drouthy conditions may be killed.

*Prepared by entomologists of the Texas Agricultural Extension Service and the Texas Agricultural Experiment Station.

CHAFF SCALE—This pest is a circular to elongate, flattened scale, grayish or grayish brown. These insects are found on all parts of the tree, especially on twigs and branches.

PURPLE SCALE — These curved, oystershell-shaped scales are purplish or purplish brown and attack all parts of the tree.

GLOVER SCALE—This insect resembles purple scale except that it is more narrow and not so curved. Habits are similar to that of the purple scale.

FLORIDA RED SCALE—This scale is circular and is dark red or purplish and attacks fruit and leaves.

Control of Scale Insects: Two percent (actual oil) emulsive or miscible oil spray or a 1 ¾ percent oil spray plus 1 quart 57 percent emulsifiable malathion per 100 gallons of water gives satisfactory control. Florida red scale is more difficult to control and a second spraying is necessary in some instances.

COTTONY CUSHION SCALE—The large, elongated, cottony white egg sac distiguishes this honeydew secreting scale which is very damaging to citrus and many ornamentals. The scale is found more commonly at the base of twigs and leaves.

Control: The most economical control is the natural control obtained by the use of vedalia beetles. Since colonies of these may be difficult to obtain, it may be best to prune out and burn infested twigs, then spray with 1 quart of 57 percent malathion emulsifiable concentrate per 100 gallons of water. Two or three applications at 10 to 14-day intervals are required. Seldom will more than one or two trees be found infested in a grove.

SOFT BROWN SCALE — This is an unarmored honeydew secreting scale which attacks the twigs and leaves. If ants are controlled in the orchard, no insecticidal control of the scale should be necessary.

OTHER INSECTS

CITRUS WHITEFLIES — These tiny white insects may cause serious damage to leaves and twigs. Honeydew secreted by the feeding insects is a medium for the growth of sooty mold.

Control: A 1 percent oil spray gives satisfactory control if the undersides of the black leaves are wet

thoroughly. A spray containing 1 quart of 57 percent emulsifiable malathion in 100 gallons of water will control these pests, also.

APHIDS — The tender new growth on citrus trees (especially tangerines) is sometimes attacked by these small, soft-bodied sucking insects. Leaves usually are deformed permanently and the honeydew secreted by the insects causes formation of black sooty mold.

Control: One quart of 57 percent emulsifiable malathion or 1 quart of 25 percent emulsifiable lindane per 100 gallons of water gives control, but two or more applications often are necessary.

ANTS—The presence of ants generally precedes or accompanies an infestation of honeydew secreting insects.

Control: Ants should be kept under control, and this may be done by dusting the base of the trees and all ant nests with 5 percent heptachlor, 2 ½ percent dieldrin or 10 percent chlordane dust. Liquid formulations of these materials may also be used according to directions on the containers.

TERMITES — Two species of termites attack citrus trees. Termites cause damage to old trees in poor condition or other trees in orchards which have an excess of dead limbs and tree stumps. Their damage is to the above-ground portions of the trees. One species of termites attacks young trees generally and damages the roots. Sometimes tap roots may be destroyed and wind may blow these trees down.

Control: Use chlordane or dieldrin in emulsion spray applied to the trunk 1 foot above the ground and to the soil around base of tree. Follow directions on the manufacturer's label for dilution.

BORERS—Only weakened trees that have woody tissue exposed are attacked.

Control: Keep trees in good growing condition with adequate water and fertilizer. Prune out dead wood and treat wounds with an approved tree paint.

ORANGE DOGS — These worms, which look like bird droppings on the twigs, feed on the leaves. Most damage occurs to young trees.

Control: The best control on small trees is destruction by hand. The worms may be controlled with cryolite. Use ½ to 2 pounds of dust per tree, depending on the size.

CITRUS FULGORIDS — The appearance of cottony white masses around twigs indicates an infestation of citrus fulgorids which may girdle and kill many young twigs.

Control: The oil-malathion mixture used for scale control will kill these insects. A second application sometimes is necessary.

INSECTICIDES

OIL — The oil used on citrus should be no lighter than a light medium miscible or emulsive oil which contains at least 92 percent unsulphonatable residues and has a viscosity of about 70-80 Saybolt seconds. Oil sprays should not be applied while the temperature exceeds 90 degrees F. Trees in drouthy condition should not be sprayed. Sulfur should not be applied within 4 weeks of an oil spray nor should an oil spray be applied within 4 weeks of an application of sulfur.

SULFUR—The sulfur used for dusting citrus should be an especially conditioned sulfur. Several companies have such material, which may be sub-limed or treated with a conditioner. Sulfur is not effective against mites when temperatures are below 80 degrees F. From 50 to 80 pounds per acre should be used.

MALATHION — Malathion is a phosphorus compound which is considered relatively safe; however, persons using the material should exercise care to stay out of spray drift and not breathe the vapors.

BIOLOGICAL CONTROL

Beneficial insects and mites play an important role in preventing scale insects from causing economic damage to citrus. They feed on and kill various scale insects and mites. In many cases, they keep populations of scale insects so low that chemical control is not economical. Chemical control, however, is resorted to when there is an upset between scale pests and beneficials, and is used on young citrus on occasions. Spraying for scale control is not only costly but may give only temporary relief, particularly where poor application is made. Beneficials may sometimes require a year or longer to become re-established in the grove. They do not

operate as well under dusty grove conditions in trees suffering from lack of soil moisture, or in the tree rows next to a dusty road. Biological control of mites has been of limited success, but of some importance on spider mites during the winter months. Workers at Substation No. 15, Weslaco, are striving to introduce all other beneficials that feed on scale insects and mites in order to secure better control. These beneficials work for you. Treat them as "friends."

CAUTION

It is not economical to spray for scale insects under most conditions. Many trees in the Rio Grande Valley have never been sprayed and continue to yield well. The use of organic insecticides in orchards is discouraged since these materials always upset the biological balance and secondary results may be harmful. The use of oil makes trees more susceptible to cold injury. Caution is urged in the use of oil sprays. It is never wise to interplant a young orchard with a crop which will need insecticidal controls since scale infestations may develop.

Malathion should not be applied within 7 days of harvest. Lindane should not be applied after the fruits start to form.

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